of Balsfjord, age very uncertain, perhaps late Cambrian; 4. Alten group, regarded as Silurian; 5. Golda group, Devonian. The groups of the Secondary period are quite unrepresented. Throughout the Quaternary period the land has been subjected to an upheaving of about 120 metres, and this elevation has been continued down to the historic time. As to whether the land is still rising, there is no positive evidence existing. In any case it is certain the elevation during the last thousand years has been insignificant. When it is stated in so many quarters as a geological fact that the northern part of Norway rises about one-third of a metre in a century, this rate is evidently much too great. The unstratified rocks met with are also described. To No. 135 there is a supplement of forty-four pages, containing a report with plates of Mr. Tylor's lecture to the Geologists' Association on denuding agencies.

THE *Proceedings of the Natural History Society of Glasgow*, vol. ii. Part I. contains among the most interesting of its articles a paper by Mr. John A. Harvie Brown on the birds found breeding in Sutherlandshire, and another by the same author in conjunction with Mr. E. R. Alston, F.Z.S., on the mammals and reptiles of the same county. These form an excellent addition to Mr. Selby's on the same subjects.—Mr. J. Gilmour writes on the introduction of the Wild Turkey (*Meleagris gallipavo*) into Argyllshire; as does Mr. D. Robertson on the Sea Anemonies of the shores of the Cumbraes, &c.—Mr. J. Coutts describes the post-tertiary clay-beds at Kilchattan Bay, Isle of Bute.—Mr. R. Gray notes points in the distribution of the Capercaillie in Scotland; on the occurrence of the Crane in Rossshire; on the Wood Pigeon, &c.—Lord Binning gives notes on the food of the Wood Pigeon.—Capt. H. W. Fielden, now naturalist to the Arctic Expedition, writes on the Gaur or Indian Bison, and gives notes on a tour through the Outer Hebrides.—Mr. J. S. Dixon gives notes on the discovery of an ancient canoe at Little Hill, Cadder Moor.—Dr. Grieve records dredging notes from the Bay of Rothesay.—There are other short papers by Mr. W. Galt, Mr. J. Young, Dr. D. Dewer, Prof. A. Dickinson, Mr. J. Ramsey, Mr. D. Robertson, Rev. J. L. Somerville, &c.

Zeitschrift der Oesterreichischen Gesellschaft für Meteorologie, Sept. 1.—Mr. Blanford's researches on solar radiation and spots, described in a former number of NATURE, form the subject of the first paper.—In the concluding part of Dr. Theorell's description of his printing meteorograph, he states that, with certain precautions, the instrument may be kept for a long period in good working order. One has been in use at Upsala during the last three years and a half, and has lost nothing of its original precision. In a note appended to the inventor's description, Herr Osnaghi mentions some alterations which have been made in the Vienna instrument; thus the power to register great velocities of wind, in which it was formerly wanting, has been conferred upon it. Since the completion of these alterations the meteorograph has worked constantly and regularly.—In the "Kleinere Mittheilungen" we have an interesting extract from a letter written by Director Hoffmeyer, on the causes of the cold weather in May 1874. Up to the 21st of the month the synoptic charts show a maximum of pressure over N.W. and W. Europe, stretching like a great screen between the Atlantic and Central Europe, from Spitzbergen almost to Algiers, the minima coming partly from the Arctic seas, partly from the Western Mediterranean, with gradients steep towards N. and W. Such a distribution of pressure must give rise to a cold Polar stream flowing over the greater part of Europe. In Vienna the cold was greatest between the 16th and the 18th, and then the high pressure began to travel eastwards. This movement of the maximum produced a great change. The Atlantic minima, instead of moving northwards along the west coast of Greenland as hitherto, now pressed eastwards, reached Iceland and the Azores, and soon the pressure was lowest in the very district where a few days before the maximum existed. At the same time temperature rises in Central Europe. In June a similar succession of barometric changes occurred, and the maximum of pressure in the N. W. was again attended with cold at Vienna. Herr Hoffmeyer observes that areas of high pressure are much more quiet and longer lasting than minima, which travel rapidly, change their shapes, and throw off secondary disturbances. He thinks the present system of averages insufficient for the purposes of generalisation, and regards the researches of Köppen on the properties of winds in different conditions of atmospheric distribution as a step in the right direction.

THE July number of the *Bulletin Mensuel de la Société d'Acclimatation de Paris*, which is always more than a month behind date, opens with the Secretary's Annual Report on the proceedings of the Society in 1874.—Special attention has been given to the training of wild animals, such as zebras, for domestic purposes, and to the breeding of hybrids, such as those between the horse and zebra, ass and zebra, &c. Complete success is said to have attended the attempts to tame the zebras in the Gardens of the Society. The efforts of the Society are largely assisted by the experiments carried out by such gentlemen as M. Cornély, M. Mairét, M. Moreau, and others, who have succeeded in rearing many of the rarer forms of foreign animal life, and useful plants.—New Caledonia is the subject of a lengthy paper by M. Germain, who considers that that country would easily support many useful animals which do not exist there. By their introduction the country would be greatly benefited, while its importance would also be increased by additional facilities being given for utilising its indigenous produce. It is peculiarly rich in timber, which affords shelter to many kinds of useful birds.—The cultivation of the Alfa Plant (*Stipes tenacissima*), which grows wild in Algeria, is strongly recommended in the South of France, where there are large tracts of land well suited to its growth.—The cultivation of new varieties of silkworms is steadily progressing in France, and the improved breeds which have been introduced have greatly assisted in remedying the evils of the silkworm disease.

THE *Schriften der Naturforschenden Gesellschaft in Danzig* (vol. iii. heft 3).—From this publication we notice the following papers:—Researches on the Prehistoric Times of West Prussia, by Dr. Lissauer.—On the Petrefacts found in the Diluvial Deposits near Danzig, by Herr Conventz.—On the Culture of the Caterpillars of *Gastropaeha pini*, by G. Brischke.—On a Humming *Acilius sulcatus*, by the same.—Report on the investigations of Antiquities made in the neighbourhood of Neustettin during 1873, by Major Kasiski.—On the Spiders of Prussia, (seventh treatise), by A. Menge, with tables. This paper is the most valuable one in the publication, and gives proof of the wonderful diligence and energy of its author.

La Belgique Horticole, September and October.—In the current number of this magazine, usually devoted almost entirely to horticulture, are several articles of more than common interest. The paper of De Candolle's is reprinted entire which has attracted a good deal of attention, on the different effects on the growth of the same species of the same temperature in different latitudes. Prof. E. Morren, the editor, has two articles on the "carnivorous" habits of *Pinguicula* and *Drosera*. Following Mr. Darwin's lead in a careful series of experiments on two Alpine species of the former genus, *P. alpina* and *longifolia*, and the common *D. rotundifolia* of the latter genus, he finds the same results as regards the secretion of a fluid which causes rapid decay of the substances in contact with it, but is not prepared to admit any process of actual digestion or assimilation on the part of the plant. M. Ch. Royer has also an interesting note on the cause of the sleep of plants.

SOCIETIES AND ACADEMIES

LEEDS

Naturalists' Field Club and Scientific Association, September 15.—Mr. Henry Pocklington, F.R.M.S., in the chair.—Mr. James Abbott exhibited a number of interesting plants collected in the West Riding, including *Potentilla norvegica*, which grows abundantly on the banks of the Leeds and Liverpool Canal between Armley and Kirkstall, and appears to have been thoroughly naturalised. It was first gathered about 1860, by Mr. Wm. Kirkley, but not satisfactorily determined at the time. In 1868 it was found, also apparently native, in Burwell Fen, Cambridgeshire, by Mr. G. S. Gibson, and recorded by him in the *Journal of Botany* for that year (vol. vi., p. 302; also see "Babington's Manual," seventh edition). In 1874 Mr. Abbott noticed it in great abundance, and in 1875 it was sent to Kew to be named. It turned out to be a Scandinavian form, though in what manner it reached the Leeds district is as yet unaccounted for. Mr. C. P. Hobkirk, of Huddersfield, reports that it grows on the canal banks in his neighbourhood, where he found it in 1873. Mr. Abbott also reported the capture of the Clouded Yellow Butterfly (*Colias edusa*) near Adel Dam, six miles north of Leeds, on the 5th September. This ordinarily southern form seems this year to have extended its range far to the northward. *Vanessa antiopa*, also recorded from Kirkstall Road, Leeds, in September.

PARIS

Academy of Sciences, Oct. 4—M. Frémy in the chair. The following papers were read:—On the Observatory of the Office of Longitudes at Montsouris, by M. Mouchez.—On the dredging of the roadstead of Port Said, second note by M. de Lesseps.—New researches on beats of the heart in the abnormal state, and on the registration of these beats and of those of the arteries, by M. Bouillaud.—On disordered variation of hybrid plants, and deductions which may be made from it, by M. Naudin.—On the carpellary theory, according to the Irideæ, by M. Trecul.—Results of observations of solar protuberances and spots, from 23rd April to 28th June, 1875 (fifty-five rotations), by P. Secchi. Four tables are given; deductions to follow.—On the *Hemisepius*, new genus of the family of Sepians, with some remarks on species of the genus *Sepia* in general, by M. Steenstrup.—Results obtained from attempts at industrial applications of solar heat, by M. Mouchot. The apparatus (in work at Tours) consists of a silver plate mirror, in form of a truncated cone, turning with the sun; a cylindrical annular boiler at focus, with blackened surface; and a glass envelope admitting the sun's rays, but preventing their exit when transformed into obscure rays. One very hot day, five litres of water were vaporised in the hour, representing 140 litres of steam per minute.—On the mechanical properties of different vapours at saturation in a vacuum, by M. Antoine.—On the different quantities of heat produced by the mixture of olive oil with concentrated sulphuric acid, according as the boiling of the acid is more or less recent, by M. Maumené.—On the existence of ferruginous and magnetic corpuscles in atmospheric dust, by M. Tissandier. Drawings are given.—On the formation of clouds, by M. Hureau de Villeneuve.—On sexualised Phylloxera and the winter egg, by M. Balbiani.—MM. Chablaix, Corteggiani, and Pourcherol, also presented notes on Phylloxera.—M. Marsanne submitted a memoir on "Process and apparatus for production of signals, fires, and electric lights."—M. Malessart presented a second note on the problem of aviation.—M. Tellier called attention to an experimental voyage about to be made to La Plata for transport of meat preserved by cold.—M. Petit presented a note relative to the transformation of starch by diastase, and the production of a new saccharine matter.—The Secretary notified a brochure by M. Cossa, on the syenite of Biellese.—On the eclipse of the sun of 28–29 Sept. 1875, by M. Angot.—On the reduction of a ternary cubic form to its canonic form, by M. Brioschi.—On the value of the coefficient of expansion of steam from superheated water, by M. Croullebois.—Influence of stripping off the leaves on the vegetation of the beet, by M. Violette. It diminishes the root's weight and yield of sugar, increasing the proportion of other matters.—On two new meteorites of the desert of Atacama, and on the meteorites found hitherto in this region of South America, by M. Domeyko.—On clouds of ribbon-form, by M. de Fonvielle.—Observations of a bolide at Couiza (Aude) on the night of 30th Sept. 1875, by M. Amigues.—The thunderstorms of 1875, by M. d'Arbaud-Blonzac.

Oct. 11.—The following papers were read:—Results of observations of solar protuberances and spots from April 23 to June 28, 1875 (55 rotations) concluded, by P. Secchi. The daily number of protuberances and surface of spots steadily diminished. The great metallic eruptions ceased when the large spots disappeared. Two maxima of protuberances in each hemisphere disappeared, leaving only the minima of the equatorial zones. Protuberances diminished in height. Faculæ disappeared from round the poles and were confined to the zone of spots and protuberances.—M. Girardin presented a new edition of his work, "On Dung and other Animal Manures."—M. Favre gave an extract from his memoirs "On the transformation and equivalence of chemical forces."—On the rotatory polarisation of quartz, by MM. Soret and Sarazin.—New note on the processes of magnetisation, by M. Gaugain.—On the formation of hail, by M. Planté. Electricity suddenly brings the water of clouds to a state of extreme division, facilitating congelation in a medium of low temperature. Terrestrial magnetism, or the permanent electric current of the globe, causes the gyratory movement of electrified cloud masses.—Researches on the ammonia contained in seawater, and in that of salt marshes in the neighbourhood of Montpellier, by M. Andoynaud.—On commercial analysis of sugars, and the influence of salts and glucose on crystallisation of sugar, by M. Durin.—On the hypsometric distribution of living molluscs in the Central Pyrenees, by M. Fischer.—On the necessity of surrounding the lower part of vine-stocks with coal-tarred powders, by M. Girard.—Five other communications relative to Phylloxera.—M. Lehmann presented a further note on a system of propulsion for steamships.—M. Le Breton submitted to the judgment of the Academy various apparatuses for the ascension of liquids.—M. Holzner showed specimens of carrot-roots, bearing pucerons apparently of a new species.—The Director-General of Customs presented a general tableau of the commerce of France with its colonies and foreign powers during 1874.—The Secretary called attention to a memoir by MM. Nobel and Abel on explosives, and one by M. Volpicelli, defending Melloni's electrostatical theory.—Remarks on the use made, in antiquity, of solar heat, on occasion of M. Mouchot's recent note, by M. Buchwalder.—On the electric conductivity, of pyrites, by M. Dufet. This is true metallic conductivity very variable with the physical structure of the specimen, but in a given crystal, depending neither on the direction, the intensity, nor the duration of the current.—On the toxical effects of alcohols of the series $C^{n}H^{2n+2}O$, by M. Rubuteau.—On the new tellurised minerals lately discovered in Chili, by M. Domeyko.—Perforation of a quartzous grit by the roots of trees, by M. Meunier.

BOOKS AND PAMPHLETS RECEIVED

BRITISH.—Report of the Meteorological Commission of the Royal Society.—Ganot's Elementary Treatise on Physics. Seventh Edition, Revised and Enlarged. Translated by E. Atkinson, Ph.D., F.C.S. (Longmans).—Ultima Thule; or, a Summer in Iceland: R. F. Burton (Nimmo).—Proceedings of the Bath Natural History and Antiquarian Field Club. Vol. iii. No. 2.—Elementary Lessons in Botanical Geography: J. G. Baker, F.L.S. (Reeve).—Numerical Examples in Heat: R. E. Day, M.A. (Longmans).—Zoology for Students: C. Carter Blake, D.Sc., with Preface by Richard Owen, C.B., F.R.S. (Daldy, Isbister).—Pollution of Rivers: Wm. Hope, V.C.—Food Manufacture *versus* River Pollution: Wm. Hope, V.C.—The *Challenger's* Crucial Test of the Wind and Gravitation Theories of Oceanic Circulation: Jas. Croll.—Notes on some Comparative Microscopic Rock-Structure of some Ancient and Modern Volcanic Rocks: J. Clifton Ward, Assoc. R.S.M., F.G.S. (Taylor and Francis).—A Series of Twelve Maps for Drawing and Examination: Charles Bird, R.A., F.R.A.S. (Stanford).—Revised List of the Vertebrated Animals in the Zoological Society's Gardens. Supplement.—Medicinal Plants: R. Bentley, F.L.S., and Henry Trimen, M.B., F.L.S. Part I. (Churchill).—Nebraska; its Advantages, Resources, and Drawbacks: Edwin A. Curley (Low, Marston and Co.)—The Dawn of Life: J. W. Dawson, LL.D., F.R.S. (Hodder and Stoughton).—Elementary Analytical Geometry: T. G. Vyvyan, M.A. (Geo. Bell and Sons).—The Botanical Locality Record Club. Report for 1874 (E. Newman).—Elementary Biology: Prof. T. H. Huxley, F.R.S., &c., and H. N. Martin (Macmillan and Co.)

COLONIAL.—Hybridity and Absorption: Daniel Wilson, LL.D., F.R.S.E. (from the *Canadian Journal*).—Mineral Statistics of Victoria, Australia, for 1874.—Report of the Geology and Resources of the Region and Vicinity of the Forty-ninth Parallel: G. M. Dawson, Assoc. R.S.M., F.G.S.—Transactions of the Royal Society of New South Wales for 1874.—Report on Deep-sea Dredging Operations in the Gulf of St. Lawrence: J. F. Whiteaves.—Reasons suggestive of Mining on Physical Principles for Gold and Coal: J. Wood Beilby (Melbourne: Walker, May and Co.)—Transactions of the Literary and Historical Society of Quebec. New Series, Part II.

AMERICAN.—Tinnitus Aurium: S. Theobald, M.D. (Baltimore, Innes and Co.)—Bulletin of the Bussey Institution, Boston, U.S. Parts II., III., IV.—Iowa Weather Review, No. 1: Dr. Gustavus Hinrichs.—Report of the Director of the Menagerie, New York.

FOREIGN.—Boletin de la Academia Nacional de Ciencias Exactas existente en la Universidad de Cordova. Part IV. (Buenos Aires).—De la Nature des Eléments de la Chimie, par J. A. Groshaus (Haarlem, Les Heritiers Loosjes).—N. Sewerzow's Erforschung des Thian-Schan-Gebirgs-Systems, 1867, &c., von A. Petermann (Gotha, Justus Perthes).

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